TITLE OF ARTICLES: Effect of Disinfectant on Aerobic sewage degradation using Dettol and Izal as case study

AUTHOR(S): Emenike P.C, Agunwamba J.C and Tenebe I.T

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ABSTRACT: Disinfection is considered to be the primary mechanism for the inactivation/destruction of pathogenic organisms to prevent the spread of diseases and of which some of the organisms maybe needed for degradation as occurring in septic tank. This work investigated the effects of disinfectants on aerobic sewage degradation using Dettol and Izal as case study. Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and fecal coliform were used to determine the effectiveness of the two disinfectants. Sewage for analysis were collected from the University of Nigeria Nsukka treatment plant for laboratory analysis. Five 4 litres containing sewage having different dose in ml of the two disinfectants (Dettol and Izal) of 0.5, 1.0, 1.5, 2.0, and 2.5 with one control were established. Samples for analysis were obtained for 4 weeks for each disinfectants having interval of 3 days. Short and Long term effects of the disinfectants were studied and the results were analyzed using Turkey-Kramer multiple comparison test. The pattern of changes reflecting the effect of the respective disinfectants on faecal colony of coliform shows the pattern for Izal is similar to that of Dettol, regression coefficient were the same. Maximum effects were observed at concentrations 1.5 ml for either Izal and Dettol. Resistance of colony to higher concentration of disinfectant was observed with the respective disinfectants on prolonged study. Addition of 1ml can be seen as the critical dosage. The low COD values observed at 0.5 ml or 1 ml suggest the presence of high faecal colony, likely due to tolerance or inhibitory effects. Low BOD values were observed with addition of 1 ml confirms that the dosage is the critical dosage since it suggest that lower biomass requiring oxygen for oxidation was present in the sample at this dosage. This is also reflected in the COD assessment. From comparism of the disinfectants effect shows usage of Izal recorded higher disinfectant effect compared to Dettol.